



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 7**

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APR 7 2014

Ms. Cindy Bladey  
Chief, Rules, Announcements, and Directive Branch (RADB)  
Division of Administrative Services  
Office of Administration  
Mail Stop: 3WFN-06-44M  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Ms. Bladey

RE: Review of the Generic Environmental Impact Statement for License Renewal of Nuclear  
Nuclear Plants, NUREG-1437, Supplement 51, Regarding Callaway Plant, Station 1,  
Draft Report for Comment

The U.S. Environmental Protection Agency has reviewed the Nuclear Regulatory Commission's Generic Environmental Impact Statement for License Renewal of Nuclear Plants, NUREG-1437, Supplement 51, Regarding Callaway Plant, Unit 1, Draft Report. Our review is provided pursuant to the National Environmental Policy Act 42 U.S.C. 4231, Council on Environmental Quality regulations 40 CFR Parts 1500-1508, and Section 309 of the Clean Air Act. The Draft GEIS, Supplement 51, was assigned the CEQ number 20140041.

The federal action proposed by the NRC is the license renewal of the Callaway Nuclear Plant for an additional 20 years beyond the expiration date of the facility's current 40-year license (NPF-30), which is set to expire on October 18, 2024. The purpose of the proposed action, as stated in the DSEIS, is to provide an option which allows for power generation capability beyond the term of the current nuclear power plant operating license to meet future system generating needs. The NRC staff concluded that the environmental impacts of the renewal of the operating license would be smaller than those of feasible and commercially viable alternatives for energy production and that the continued operation of the Callaway Plant is the environmentally preferred alternative.

Callaway Plant, a single-unit nuclear power plant located in Callaway County, Missouri, is owned and operated by Union Electric Company, dba Ameren Missouri (Ameren). The 7,354-acre site is located approximately 10 miles southeast of Fulton, Missouri and 80 miles west of St. Louis, Missouri. The major power generation facilities are located within a 2,765-acre power plant site area, which encompasses the containment building and related structures, a natural-draft cooling tower, a switchyard, the ultimate heat sink retention pond and cooling tower, a water treatment plant, and



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administration buildings, warehouses, and other features. The facility follows the Standardized Nuclear Unit Power Plant System design, and has a generating capacity of 1,236 megawatts electric. The Callaway Plant utilizes a closed-cycle cooling system with the Missouri River serving as the primary source of make-up water lost through the cooling process.

The 'Purpose and Need' statement, as written, seems to warrant further explanation in the FSEIS, as the document appears to confuse project 'purpose and need' with the proposed action itself. The intent of 40 CFR 1502.14 is difficult to achieve when project purpose and need are so directly linked to the reissuance of an operating license. Clarification whether the purpose of the project is to meet the projected future energy demands of the region currently met by Callaway operation, or rather if it specifically pertains to a license renewal decision would be beneficial. Without such clarification of purpose and need, the EPA has concerns about whether a rigorous evaluation of the alternatives carried forward can truly be completed, as required by 40 CFR 1502.14.

The FSEIS should include updated information regarding the decision making process for the revised Waste Confidence Rule in regards to Callaway. Additionally, the DSEIS indicates that there is a future necessity for the implementation of an independent spent fuel storage installation for the plant because the spent fuel pool does not have adequate storage capacity to take the plant to the end of its current operating license. By approximately 2020, the spent fuel pool will not have enough capacity to offload an entire core. The DSEIS states that because this project is sufficiently far in the future, no specific plans have been developed. EPA asserts that the FSEIS cannot sufficiently address the issue of the storage of spent nuclear fuel prior to completion of the Waste Confidence GEIS and completion and approval of a plan for the facility to properly manage spent fuel on- or off-site within the next 6 years.

The DSEIS effectively identifies the purpose and utilization of the Radiological Environmental Monitoring Program, a supplement to the Radioactive Effluent Monitoring Program, in relation to the Callaway Plant operations and monitoring. The NRC's assertion that "the impacts from radioactive effluents would be SMALL" would further benefit from the adequate and thorough characterization of the data produced by these monitoring programs, as well as an identification of the monitoring sites used to collect data, the type of media sampled at each location and a representation of monitoring trends relative to baseline data. A more complete discussion in the FSEIS of more detailed requirements and regulatory limitations set forth in the National Pollutant Discharge Elimination System permit would be valuable to the integrity of the assertions outlined in the Environmental Impacts of Operation section.

Based on our overall review, EPA has rated the Draft SEIS Environmental Concerns-Insufficient Information (EC-2), that is, additional information is requested in the FSEIS regarding some environmental concerns. EPA's detailed comments on aspects of the DSEIS and a copy of EPA's rating descriptions are included as an enclosure to this letter, and are also accessible at <http://www.epa.gov/compliance/nepa/comments/ratings.html>. The EC-2 rating is based on the lack of a clear and concise purpose and need statement, and subsequent evaluation of alternatives based on the stated purpose and need, as well as lack of adequate discussion regarding waste confidence and the apparent need for and installation of an independent spent fuel storage installation prior to the end of the facility's current license term.

We appreciate the opportunity to provide comments regarding this project. If you have questions or concerns regarding this correspondence, please contact Amber Tucker at (913)551-7565, or [tucker.amber@epa.gov](mailto:tucker.amber@epa.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Jeffery Robichaud", with a large, stylized flourish at the end.

Jeffery Robichaud  
Deputy Director  
Environmental Services Division

2 Enclosures

**DETAILED COMMENTS ON  
DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT  
FOR LICENSE RENEWAL OF NUCLEAR PLANTS,  
SUPPLEMENT 51, REGARDING  
CALLAWAY PLANT, STATION 1**

**Purpose and Need**

We acknowledge that the DSEIS relies upon the GEIS for its purpose and need statement and that this statement is generic to all NRC license renewal decisions. However, we believe it is important to comment on this feature of the DSEIS as it appears to influence the thoroughness of the document's evaluation of alternatives. Both the GEIS and the draft SEIS appear to confuse project 'purpose and need' with the proposed action itself. This misinterpretation could impede the complete and effective consideration of all reasonable alternatives in this DSEIS.

In a NEPA context the *project* purpose and need is to "provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs, which may be determined by State, utility, and, where authorized, Federal decision-makers" (Section 1.2, Purpose and Need for the Proposed Federal Action).

However, the expiration of Callaway's current operating license and the need to meet existing energy needs in the region are what the NRC is responding to "in proposing the alternatives including the proposed action" (40 CFR 1502.13), only one of which is the renewal of the existing license. For the purpose of meeting the existing and projected energy needs in the region, per 40 CFR 1502.14 (a), (b), (c), and (d), various alternatives to the relicensing of the Callaway plant should be fully considered and evaluated. This approach to purpose and need fully implements CEQ requirements regarding NRC's responsibility to "rigorously explore and objectively evaluate all reasonable alternatives", devote substantial treatment to each alternative considered in detail", "include reasonable alternatives not within the jurisdiction of the lead agency" and "include the alternative of no action."

The intent of 40 CFR 1502.14 is difficult to achieve when project purpose and need are so directly linked to the reissuance of an operating license. An alternative which does not meet the project purpose and need, as stated, does not appear to be a reasonable or viable alternative. The FSEIS should clarify whether the purpose of the project is to meet the projected future energy demands of the region currently met by Callaway operation, or rather if it specifically pertains to a license renewal decision.

**Waste Confidence Rule and Spent Nuclear Fuel**

Storage, transportation, and disposition of spent nuclear fuel is of particular concern for all nuclear power plants. The U.S. Environmental Protection Agency recently commented on NRC's Waste Confidence Draft Generic Environmental Impact Statement regarding the pending update to the Waste Confidence Rule. The EPA's comment letter was submitted to NRC on January 15, 2014. The EPA appreciates the opportunity to comment on this important issue.

The FSEIS should include updated information regarding the decision making process for the revised Waste Confidence Rule in regards to Callaway. It should address how radioactive waste handling, storage, and disposition will be conducted at Callaway in light of the updated rule, and the changes to



current procedures that will be made as a result of the updated rule. The FSEIS should clarify the potential changes in direct, indirect, and cumulative impacts that may occur as a result of the updated rule.

The Waste Confidence Draft GEIS states that if the results of the Waste Confidence Rule and supporting EIS identify information requiring a supplement to the SEIS that an appropriate additional NEPA review will be performed for those issues prior to the NRC making a final licensing decision. Section 2.1.2 Radioactive Waste Management of the DSEIS states that “an independent spent fuel storage installation is proposed for the plant because the pool does not have adequate storage capacity to take the plant to the end of its current operating license. By approximately 2020, the spent fuel pool will not have enough capacity to offload an entire core.” This section goes on to state that “Ameren intends to construct an independent spent fuel storage installation, but this project is sufficiently far enough in the future that no specific plans have been prepared at this time.” Being that the spent fuel pool will reach its maximum capacity prior to the start of the proposed license renewal and that this renewal would extend the licensing period 30 years into the future, the EPA contends that the timely preparation of a plan for construction of an ISFSI is indeed exceptionally relevant and pertinent to making a fully informed and effective license renewal decision. The unique circumstances of spent fuel management at the Callaway Plant make this, in our opinion, an issue for which significant information has been identified warranting a site-specific analysis. This issue has not been adequately addressed in the DSEIS.

As the FSEIS cannot sufficiently address the issue of the storage of spent nuclear fuel prior to completion of the Waste Confidence GEIS and completion and approval of a plan for the facility to properly manage spent fuel on- or off-site within the next 6 years, we request that the issuance of the FSEIS be delayed until those two issues are fully and finally addressed. As directed by the Commission, the NRC will not issue a renewed license before the resolution of waste confidence-related issues. We strongly echo this standpoint, but also recommend that no decision on the reissuance of Callaway’s license be made until and unless the Waste Confidence GEIS has been finalized and the facility-specific plan for spent fuel storage past 2020 has been finalized and approved by the NRC.

### **Climate Change**

Ameren’s discussion of climate change and greenhouse gases in the DSEIS is appreciated. CEQ issued draft guidance for public comment on when and how federal agencies must consider GHG emissions and climate change in their proposed action. While this guidance is not yet final, the EPA recommends that the FSEIS explicitly reference the draft guidance, describe the elements of the draft guidance, and to the relevant extent, provide the assessments suggested by the guidance. We furthermore recommend a discussion of best management practices to reduce GHGs and other air emissions during operation of the facility buildings, equipment, and vehicles.

The draft guidance proposes that climate change effects should be considered in the analysis of projects that are designed for long-term utility and located in areas that are considered vulnerable to specific effects of climate change within the project’s timeframe. The focus of this analysis should be on those aspects of the environment that, based on the interaction between the proposed action and the environment, are affected by the proposed action and on the significance of climate change on those aspects of the environment. Agencies should consider the specific effects of the proposed action (including the proposed action’s effect on the vulnerability of affected ecosystems), the nexus of those effects with projected climate change effects on the same aspects of our environment, and the implications for the environment to adapt to the projected effects of climate change.

Efforts should be made to minimize GHG emissions to the extent feasible during the license renewal period. Clean energy options, such as energy efficiency and renewable energy, should be a consideration in the purchase of maintenance equipment and vehicles. In addition, the EPA recommends that the project team thoroughly consider the need for measures to manage potential climate-related impacts, such as potential increases in storm frequency and intensity resulting in increased floodwater flows, and conversely, the potential for increased drought events.

The DSEIS does not address measures for climate change adaptation for the Callaway site. Though the power plant site area containing the major power generation facilities is sited 336 feet above the average elevation of the Missouri River, the intake structure is located within the river floodplain and thus has a higher potential to be directly affected by high water events. High water events possibly associated with regional climate change (e.g., changing precipitation patterns, changing hydrology) could threaten facility performance and control by interfering with or eliminating access to the intake structure or neighboring wells. In addition, low flows or drought conditions could affect access to Missouri River water through the intake structure and access to groundwater through wells terminating in the alluvial aquifer. Given that the relicensing of the Callaway facility would provide for its continued operation through 2044, we believe it is essential that the FSEIS address how the facility intends to adapt to reasonably foreseeable changes in climate which might affect the safety and performance of the facility and, particularly, the circulating water system. Underscoring both the significance and reality of this issue, the NRC need only review impacts to the operation of Cooper Nuclear Station at River Mile 533 on the Missouri River during the high water events of 2011. Low river flows have also frequently affected the ability of other energy facilities withdrawing Missouri River water for operational purposes from accessing adequate volumes of water. Please refer to EPA's website ([www.epa.gov/climatechange](http://www.epa.gov/climatechange)) for useful information pertaining to climate change.

### **Evaluation of Alternatives**

Though a summary of impacts for each alternative is presented in Table 8-6, there does not appear to be a rigorous evaluation of the alternatives carried forward in the DSEIS for detailed review. In our view, the power of the evaluation required by NEPA, particularly an evaluation of a reasonable range of alternatives to a proposed action, is in a detailed and well-documented determination of whether it is good public policy to proceed with an action as opposed to another alternative. The discussion of this evaluation of a range of reasonable alternatives within Chapter 8 Environmental Impacts of Alternatives is not compelling and separation points critical to an informed decision to select the preferred alternative over a different alternative are not readily apparent.

As presently described in the DSEIS, the impacts of the alternatives considered are characterized according to rather broad categories, primarily in isolation from each other and the proposed action. It does not appear that the alternatives are evaluated in direct comparison to the license renewal/extended operation proposed alternative. In effect, the license renewal stands separately from all other alternatives and is evaluated on its merit alone. As mentioned previously in our comments, this intent is reflected in the project purpose and need statement. Additionally, some significant impacts associated with continued operation of any facility are not addressed within the DSEIS, but are addressed generically in the GEIS or other NEPA documentation, making a complete comparison of several large scale impacts of continued operation to the other alternatives impossible. Though we understand that many of the issues being discussed are addressed in the GEIS, there are certainly some sections that would seem to warrant reproduction or reiteration within the individual supplemental EIS's. It would appear that this would be an issue that would certainly bear inclusion in the SEIS. The FSEIS should incorporate the evaluation of all of the impacts of license renewal, addressed in other NEPA documentation, into the

assessment of the preferred action and utilize this information to “rigorously explore and objectively evaluate all reasonable alternatives” as is required in 40 CFR 1502.14(a).

### **Monitoring Requirements**

Section 4.9.2.2 addresses Callaway’s current Radiological Environmental Monitoring Program and the Radioactive Effluent Monitoring Program, which provide a formal mechanism for determining the levels of radioactivity in the local environment and in facility effluents/releases. “The REMP supplements the Radioactive Effluent Monitoring Program by verifying that any measurable concentrations of radioactive materials and levels of radiation in the environment are not higher than those calculated using the radioactive effluent release measurements and transport models.” Ameren issues an annual radiological environmental operating report that discusses the results of the REMP and files an annual report with the NRC that lists the types and quantities of radioactive effluent releases. The NRC reviewed five years of annual REMP data and effluent release reports in preparation of the DSEIS. It is stated in this section that “Routine plant operational and maintenance activities currently performed will continue during the license renewal term. Based on the past performance of the radioactive waste management system in maintaining the dose from radioactive effluents at ALARA levels, similar performance is expected during the license renewal term...Continued compliance with regulatory requirements is expected during the license renewal term; therefore, the impacts from radioactive effluents would be SMALL.”

While the EPA recognizes that the approach to monitoring environmental and effluent radioactivity by Ameren under both programs appears to be very comprehensive, we suggest that the FSEIS should include a more detailed presentation of data than is provided in the DSEIS. Subsections within Section 4.9.2, Radiological Impacts of Normal Operations, include a description of how the REMP is designed and a statement that the NRC’s evaluation of data resulted in “no indication of an adverse trend in radioactivity levels in the environment.” There is no detail about monitoring locations or a document vehicle summarizing the actual data reviewed by the NRC. The subsection summarizing the effluent release data does provide some degree of quantified presentation, but, given the importance of the issue of radiological release, it is not prominent and combines both gaseous and liquid releases. We suggest that the FSEIS contain a map showing the locations of monitoring stations within the REMP, a table listing those stations, the media sampled at each location and a representation of monitoring trends relative to baseline data. Effluent release data should be characterized in the FSEIS specific to gaseous or liquid releases and sources of release within the facility.

A more complete discussion in the FSEIS of more detailed requirements and regulatory limitations set forth in the National Pollutant Discharge Elimination System permit would be beneficial to both Chapters 2 and 4. The NPDES permit for the Callaway Plant is possibly the most significant regulatory document available for public review. The permit regulates 11 discharges to the Missouri River and these discharges, arguably, constitute the largest opportunity for facility-generated contaminants to leave the facility site. The FSEIS should include a copy of the complete permit, including special conditions, and a section summarizing what parameters are monitored and which are limited and how the NPDES permit requirements dovetail with the Radioactive Effluent Monitoring Program.

### **Sludge Storage and Removal**

Section 2.1.6.1 Circulating Water System includes information regarding settling ponds used by the facility for sludge removal storage. There are four existing settling ponds at the facility, two of which are currently in use, the other two of which are at maximum capacity. This section states that “No



changes to the existing settling ponds are planned. However, additional settling ponds may be added as needed.” While we understand that there are no current specific plans in place for additional settling ponds, we feel that such future plans warrant further discussion. Table G-1 in Appendix G reflects an estimate of needing three additional sediment retention ponds over the next 20 years. However, there is no mention of what the plans may entail for the existing ponds. For instance, will these plans likely include the excavation and removal of sludge offsite? Or will the existing ponds simply be decommissioned and left in place once they reach capacity, and the additional ponds be constructed?

### **Current Status of Licenses and Permits**

Table 1-1 in Chapter 1 Purpose and Need for Action lists all of the current permits applicable to the operation of the Callaway Plant. Several of these permits, issued by Missouri Department of Natural Resources, specifically the NPDES permit, CAA Title V Part 70 Air Permit, and CWA Section 401 Water Quality Certification, have reached their expiration dates at the time of issuance of this DSEIS. Section 2.2.2.1 Air Quality states that “Existing emission sources at Callaway are regulated under Operating Permit No. OP2008-045. This operating permit expires on September 17, 2013. It is expected that MDNR will issue a renewed operating permit for an additional 5 years, incorporating any changes to emission sources at Callaway during the 5-year period of the existing permit.” Additionally, Section 2.2.4 indicates that Callaway’s surface water discharges are permitted under a NPDES permit, which expired on February 12, 2014. This section states that “On August 17, 2012, Ameren submitted a letter to MDNR asking for confirmation that the license extension would not violate Missouri’s Water Quality Standards. The letter also asked for confirmation that the Clean Water Act Section 401 Water Quality Certification would be required by MDNR or whether a letter of approval, based on the existing Section 401 Water Quality Certification, coupled with the ongoing NPDES permit authorization, would be issued.” At the time the DSEIS was written, a letter response on this issue from MDNR had not yet been received. EPA requests that the FSEIS include the current status of each of these permits. Additionally, including either copies of the licenses and permits currently issued to Callaway in the Appendices section, or at minimum, including links to these documents somewhere within the narrative of the FSEIS would be beneficial.

### **Refurbishment & Maintenance**

Table B-1 in Appendix B, National Environmental Policy Act Issues for License Renewal of Nuclear Power Plants, addresses Refurbishment Impacts under the Terrestrial Ecology section and states that there is the potential for Small, Medium, or Large environmental significance. This section acknowledges that it cannot be known whether important plant and animal communities may be affected until the specific proposal is presented with the license renewal application.

Mentioned in Chapter 3.0 Environmental Impacts of Refurbishment and included in Section 4.12 Cumulative Impacts as an action or project identified during this review and considered in the staff’s independent analysis of the potential cumulative effects are Ameren’s plans for a reactor vessel head replacement. This replacement is stated in Chapter 3.0 to be scheduled to occur 10 years before the license renewal, which would effectively be at present time. Given this information, it would be expected that more specific and detailed information pertaining to this action would be provided in the SEIS. Though very briefly mentioned in Section 4.12, it is not shown on Figure 4-3 Projects and Actions with Potential for Cumulative Impacts.

Section 3.0 Environmental Impacts of Refurbishment states that “the applicant did not identify the need to undertake any major refurbishment or replacement actions associated with license renewal to support



the continued operation of Callaway beyond the end of the existing operating license.” However, the preferred alternative does not expressly address the possible need for facility component updates and/or refurbishing to extend plant operation for 20 additional years beyond the end of the current license period. Any needed updates or refurbishing should be identified and their associated environmental consequences and permits approvals should be addressed in the FSEIS. The DSEIS appears to suggest that other than changes to the onsite spent fuel storage and ISFSI, no major component updates or refurbishing will be needed to extend the Callaway Plant for the 20-year renewal period. If so, we recommend that the FSEIS include a general but more definitive statement indicating that Ameren believes that no substantive updates or refurbishing is needed for the proposed license renewal.

We recommend that the FSEIS discuss means for improving the safety, operation, and environmental compliance/monitoring for Callaway Plant 1. While there may essentially not be new construction impacts associated with the proposed renewal, improvements to ongoing operational protocols could conceivably result in a reduction of operational environmental impacts over the next 20-year timeframe. While we understand upgrading is an ongoing process, the proposed license renewal offers an excellent opportunity for Ameren to reassess any existing impacts and mitigating them procedurally and structurally (technology components), where appropriate.

### **SEIS Issuance Timeline**

The EPA has some concern about the timing of this DSEIS and licensing action being conducted so far in advance of the expiration date of the existing license. The existing license expires in 2024. Therefore, this DSEIS in support of relicensing is being prepared more than 10 years before the existing license expires. While it is indeed logical to start this process well in advance of the expiration date to allow for the time needed to conduct an appropriate analysis and allow for public involvement in the process, 10 years may be excessive. Such a large span of lead time poses potential problems, such as the increased chance that conditions could change in material ways that would necessitate further supplemental environmental review and revisiting of the licensing decision. There is always a risk of changed circumstances, but that risk is much greater when a review is being done so far in advance of the action in question taking effect.

### **Consultation, Coordination and Public Involvement**

We appreciate and support your coordination efforts with resource agencies. We recommend continued coordination in support of mitigation planning for ecological, cultural, and historical resource impacts, and in consideration and development of efforts to minimize direct, indirect, and cumulative impacts.

The DSEIS summarizes NRC’s coordination with the US Fish & Wildlife Service and MDNR. Specifically related to the Federally listed pallid sturgeon, the NRC determined that the present and future operation of the Callaway plant through 2044 may affect, but is not likely to jeopardize the continued existence of the pallid sturgeon and that any adverse effects would accrue primarily through direct mortality caused by entrainment and impingement of larvae and juveniles. Given the recent and future recovery efforts of this endangered species, the EPA recommends close monitoring and mitigation efforts and continued coordination with FWS and MDNR on these and other issues pertaining to Threatened and Endangered species.

The proposed renewal offers an opportunity for Ameren to do outreach with minorities, low-income populations and other demographics living near Callaway. As a part of the proposed license renewal, we recommend that Ameren discuss nuclear power impacts with nearby populations relative to potential

benefits such as job opportunities at Callaway or educational possibilities. Traffic impacts and emergency preparedness measures are particular topics that should also be addressed. EPA encourages the applicant to continue a comprehensive public outreach strategy to inform local residents of the risks and impacts as a result of the proposed license renewal. This should include, but is not limited to, targeted outreach campaigns to neighbors, informational literature, and updated websites. Comments and responses to comments should also be summarized in the FSEIS's EJ section.

### **Referenced Documents**

The DSEIS refers to many other documents as can be seen in the list of references provided at the end of each section. Because the underlying basis for most of the information provided in this supplement are contained in these documents, a complete comprehensive review would have to include the information contained in these documents. The need for the underlying information and analyses is most noticed in **Section 2 Affected Environment** of this DSEIS. Therefore, it is suggested that all pertinent information and backup analyses needed to understand and evaluate the provided consequences of the proposed license renewal be included in the FSEIS to the extent feasible. If a complete stand-alone SEIS cannot be developed for this project, the FSEIS should provide the specific document, section, and page where referenced documentation and analyses can be obtained to support the information provided. If appropriate, the specific NRC docket web location should be provided. One option would be to make the supporting reference documents available in electronic format on the NRC website where the DSEIS is currently posted.

## **Draft Environmental Impact Statement Rating Definitions**

### **Environmental Impact of the Action**

#### **"LO" (Lack of Objections)**

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

#### **"EC" (Environmental Concerns)**

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

#### **"EO" (Environmental Objections)**

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

#### **"EU" (Environmentally Unsatisfactory)**

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

### **Adequacy of the Impact Statement**

#### **"Category 1" (Adequate)**

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

#### **"Category 2" (Insufficient Information)**

The draft EIS does not contain sufficient information for EPA to fully assess environmental

impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.